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## **Adoption of Comprehensive Risk Management in Local Government**

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### **Abstract**

In the aftermath of large company failures in the early 2000s there emerged a new wave of efforts to enhance risk management (RM) and control in enterprises. The normative management model, which urges organisations to develop a comprehensive, formal and systematic RM, was developed, and it has been promoted widely to all organisations, including public sector organisations. Using survey data, this article describes and explains the diffusion and adoption of RM innovation in local government in Finland. Our survey results support the argument that if comprehensive RM is not obligatory, it is not widely used in local government. Our analysis reveals that financial constraints explain to some extent the existence of comprehensive RM in municipalities, while structural factors such as the size of municipalities do not, even though RM is slightly more advanced in larger rather than smaller local governments. Slow adoption indicates that comprehensive RM as a managerial innovation lacks immediate benefit when assessed against the efforts and costs of its introduction and maintenance. This implies that public sector organisations may be more selective in adopting business models than is generally assumed.

### **1. Introduction**

The adoption of private sector management models dates back to the 1960s and 1970s, when local councils started to introduce corporate management ideas and techniques to perform various management functions. Soon after that, New Public Management (NPM) radically renewed the theories and practices of public sector management throughout the Western world by promoting marketisation, consumer choice and managerialism (Hood 1995). Even if by the mid-2000s NPM was said to have come to the end of its road as a model for public sector management reform (Dunleavy et al., 2006), many of its tenets persist in public management and service systems and

also appear in local reform agendas (Lodge and Gill, 2011). A core process of the gradual NPM-inspired development has been the adoption of corporate management and IT-enabled business models, which will be discussed in this article with special reference to the adoption of comprehensive risk management models in local government.

There is a plethora of business models that are fairly similar to risk management (RM), such as accrual accounting (AA), transaction processing systems (TPS), management information systems (MIS) and total quality management (TQM), performance-based management (PBM), knowledge management (KM), enterprise resource planning (ERP) and human resource management (HRM) systems (Jackson and Lapsley 2003; Spano et al. 2009; Troshani et al. 2011; Alves and Matos 2013). Such systems are essentially about the adoption of operational and management systems that are as a rule designed for private enterprises and later diffused into the public sector, making them a special case of the intersectoral diffusion of managerial and organisational innovations (cf. Leoncini and Montresor 2003). For example, the adoption of accrual accounting in Finnish local government was a radical yet fairly streamlined top-down process, as it was institutionalised by the Local Government Act of 1995. It can, in any case, be seen as a consistent step towards business-style management, thus reflecting the tenets of NPM. Most adoptions of business models are, however, bottom-up processes in highly decentralised administrative systems such as that of Finland, even though they are embedded in the hybridised system of local governance, in which NPM solutions co-exist with hierarchies and governance networks (Yliaska 2015; Anttiroiko and Valkama 2016). Most cases of intersectoral diffusion saw the daylight in the late 1980s in the form of IT system adoption, starting with vendor-based accounting, payroll and other TPSs, especially in central administration and health care and later on a smaller scale, MIS and ERP systems in larger cities. In this context, introducing a comprehensive risk management model to Finnish local government represents a special case of the adoption of business-driven principles and practices in public sector organisations, representing a managerialist aspect of NPM.

In spite of a certain degree of isomorphism in such adoption schemes, risk management (RM) has its special features and a particular historical path, which should not be ignored. One critical juncture that affected risk management in the business sector was the large company failures in the beginning of the 2000s in the USA and their aftermath, which was also noticed in the public sector. On the crest of this wave, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) published in 2004 the *Enterprise Risk Management – Integrated Framework* guidance on how to arrange efficient enterprise risk management (ERM), and this has become the dominant standard in the field (Power 2009; Hayne and Free 2014; Schiller and Prpich 2014).

According to COSO, ERM is applied in strategy setting and across the whole enterprise (COSO 2004 and 2013). COSO also argues that its model is not only for companies but for other organisations as well (COSO 2004, 13). Later, ISO created a risk management standard (ISO

31000:2009). This defines risk management as involving coordinated activities to direct and control an organisation with regard to risk. Both COSO and ISO use a formal and comprehensive model that should be usable by any organisation regardless of its size, activity or sector.

We may assume differences in the relevance of RM between private and public sectors, for the latter involves politically decided missions, the public interest, special legal requirements, public finance (especially taxation) and operations confined to a given jurisdiction, which implies differences in both loss exposures and the selection and implementation of an RM model (cf. Hood et al. 2001; Drennan and McConnell 2007). Besides this, many of the risks in the public sector are ‘soft’ and thus difficult to manage (Cooper 2010). Thus, the claim that COSO ERM is sector-neutral should be assessed against such sectoral differences.

### *Objective*

The objective of this article is to map out the adoption of comprehensive and formal risk management in local government and assess the reasons behind its diffusion. Our focus is on the adoption of the abovementioned COSO model. An antithesis to this is the silo approach, which is traditionally followed in the public sector. This relies on sectoral thinking, which leaves RM to functional bodies and managers in a diffused manner. This approach may be based on experience of managing the anticipated task-specific risks in a feasible manner within multi-purpose local government entities. We do not, thus, take for granted the suitability of any particular RM model, but rather want to discuss the diffusion of a comprehensive RM model originally developed in a private sector context.

The popularity of the comprehensive RM model is investigated in Finnish local government on the basis of survey data. The aim is also to test contingent variables that may explain its diffusion. We were not only interested in answering the question of the extent of ERM in local government but also what structural and organisation-specific factors explain the extent of comprehensive RM adoption.

The special relevance of this discussion lies in the fact that RM is an under-researched area in the local government context. Existing research, such as Crawford and Stein (2005), Nilsen and Olsen (2007), Woods (2009), Hood and Smith (2013) and Vinnari and Skaerbaek (2014), is mainly based on a case study methodology. From an international perspective, research on RM mainly comprises enterprise case studies and also to some extent surveys using enterprise data. In this study, we fill this gap by using a survey methodology in analysing RM in the local government sector.

### ***The Finnish context***

Finland is a unitary EU member state (since 1995) with some 5.5 million inhabitants at the beginning of 2015. Its administrative system consists of a central government and a single tier of local government (according to the current government plan, new regional governments will be introduced in 2019). In 2015, there were 336 municipalities and around 200 joint authorities. The average size of local authorities was 17,000 inhabitants, the largest being the capital city of Helsinki with over 600,000 inhabitants. It is noteworthy that in spite of successive governments' persistent promotion of municipal mergers, around half of the municipalities have fewer than 6,000 inhabitants.

In Finland, the Local Government Act was revised on 15.6.2012 (325/2012) with the introduction of enhanced requirements around internal control and RM. According to the law, municipalities and joint authorities must from 2014 onwards report their internal control and RM arrangements and performance in detail in their annual reporting. The law revision was justified particularly by the increased need for control and risk awareness in local governments that have outsourced and diversified their service provision in multiple ways and transferred activities to corporations, associations and joint organisations.

## **2. Explanatory model**

As there are hardly any research results concerning the extent and determinants of municipal ERM, we partly rely on literature that discusses the adoption of ERM in the business sector. We also utilise innovation adoption and diffusion models applied to local government.

Let us start the model building from structural factors. Organisations of different types and sizes do not have similar needs relating to comprehensive RM systems. These different needs can be rationalised using contingency theory, which is one of the main theories used in public administration research (Michael and Popov 2016). The COSO model states that no two organisations should apply ERM in the same way (COSO 2004). Research findings support the presumption that ERM functions better if it is congruent with the organisation's environment (Gordon et al. 2009; Woods 2009). This implies that in certain cases congruence with an organisation's internal and external circumstances requires less formality and comprehensiveness and, therefore, provides little incentive to adopt ERM in COSO style.

City size has often been recognised as one of the most important determinants of innovation adoption in the public sector (e.g. Moon and Norris 2005; Jung and Lee 2016). *Size* is actually a standard category in explanatory models and there is no need to question its relevance in RM

adoption, either. COSO argues that small and mid-sized entities may implement the component factors of effective ERM differently than large ones (COSO 2004, 23-25). Complex and decentralised organisational structures increase the need for the coordination and integration of RM. Size is also a surrogate measure of organisational capability that may influence the ability to arrange formal ERM (Schiller and Prpich 2014, 1012).

*Proposition 1: The larger the local government, the more comprehensive is the risk management.*

The more *complex* and changing the environment, the larger the need for comprehensive ERM, providing ERM is seen as an efficient tool for organisations to respond systematically to evolving risks. One indicator of an unstable environment is rapid changes in population, be it rapid growth or decline. In the Finnish context, municipal depopulation is common in peripheral areas and strongly connected to an ageing population because of selective migration. However, according to the Finnish Local Government Act (10.4.2015/410, Paragraph 7) the shrinking municipalities have the same mandatory services as any other municipality, which makes cost savings difficult. This and outmigration leads to a diminishing tax base and creates pressure on the municipal economy. On the other side of the equation, growing cities face financial stress to provide services and infrastructure to the growing population.

*Proposition 2: The less stable the municipal population, the more comprehensive is the risk management.*

The extent of *resource dependency* is a widely used external factor and highly relevant for our discussion, too. If a municipality is heavily dependent on central government grants, it must align itself to a specific external constraint. In Finland, municipalities depend variably on grants. However, grants to municipalities are mainly automatic and formula-based grants that cannot be influenced by separate municipalities. The formula criteria are mainly structural, tax base and service need-related factors.<sup>1</sup> The risk of diminishing grants cannot as a rule be prevented by municipalities' own acts and preventive controls. On the other hand, grant dependency combined with increased risks of grant cuts in Finland may lead to a need for and existence of RM that prepares the organisation for the consequences of possible cuts in grant income.

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<sup>1</sup> The grant formula gives more grants to municipalities with a disadvantageous age structure, dispersed population, higher than average illness and lower than average tax base per inhabitant. Population change as such is not decisive in grant allocation; rather, it has an indirect impact through the abovementioned factors (The Law of State Grant to Basic Services of Local Government, 29.12.2009/1704).

*Proposition 3: The stronger the grant dependency, the more comprehensive is the risk management.*

We can rationalise that those municipalities with a positive *financial status* have more to lose if they do not invest in proactive RM. The decision-makers and managers of municipalities have some latitude to influence their financial performance and position variables. According to COSO ERM (2004, 3), RM helps management to achieve its performance and profitability targets and prevent loss of resources. We can thus assume that if the municipality has ended up with indebtedness, weak solvency and accumulated deficits, this is a sign of neglected RM, which should foresee possible risks and prepare local governments for those contingencies creating risks.

On the other hand, scarcity is an important factor that limits possibilities to invest resources in RM development. We discussed this issue with two certified public sector financial auditors with long experience in Finland (Rönkkö J. and Kiviaho M., personal communication 21.9.2016). Their common interpretation was, paradoxically, that those municipalities that were in financial difficulties had no interest at all in buying ERM consulting on top of everything else, and in contrast, those municipalities with a good economic status regularly show more interest in ERM. In short, affluent municipalities have economic resources to invest in formal and comprehensive RM systems.

*Proposition 4: The existence of weak financial performance has a negative impact on the extent of comprehensive risk management.*

Managers and risk officers who initiate board and council decisions regarding RM have a great impact on both adoption and implementation of RM policies. In our case, special professions such as Chief Risk Officer (CFO) are of vital importance (Pagach and Warr, 2011; Paape and Spekle, 2012; Liebenberg and Hoyt, 2003; Beasley et al. 2005, 2008; Mikes 2008).

Internal auditing can be assumed to be a contingent factor favouring ERM. Internal auditors can play a pioneering role in the creation of a higher level of risk and control awareness and a more formalised and documented risk management system (Zwaan et al. 2009, 588-589). There is also some case-based evidence of this in Finnish municipalities (Vinnari and Skaerbaek 2014, 517).

The global Big Four audit firms – Deloitte & Touche, Ernst & Young, KPMG and PricewaterhouseCoopers – may promote enterprise RM in an effort to expand their non-audit consulting services (Power 2007, 2009). The majority of Finnish municipalities are audited by the previously municipally owned audit firm BDO Auditor. We can assume that BDO Auditor is

keen on promoting RM and making it auditable in the same way as the Big Four. However, this Big Four variable was included in our data as a control variable with the assumption that it has no causal explanatory power.

*Proposition 5: The existence of a Chief Risk Officer is in positive correlation with the extent of comprehensive risk management.*

*Proposition 6: The existence of an internal audit function (whether the organisation's own, a joint internal audit unit or internal auditing contracted from an audit firm) is in positive correlation with the extent of comprehensive risk management.*

*Proposition 7: A Big Four audit firm is not a factor that has a different impact on ERM from other audit firms (mainly BDO Auditor).*

In essence, local governments are politico-administrative organisations (Bellò and Spano 2015; Bouckaert et al. 2010; Christensen 2012). Besides public managers who decisively influence RM, *party politics* also has a role to play. We could assume that socialists raise doubts about the suitability of business models and are critical of blue-eyed enthusiasm about promoting private sector management ideas in the public sector (Mongkol 2011). Accordingly, socialists who are usually defenders of the traditional Nordic welfare model are more sceptical than non-socialists about the use of ERM tools. Such systems can even be seen to support management control of labour processes in a capitalist system (Mihret 2014). Socialist representatives include members of parties left of the Finnish Centre Party, of which the members of the Social Democratic Party forms the largest group nationally. This variable indicates the share of socialist councillors elected to municipal councils for the term 2009-2012.

*Proposition 8: The more socialist representatives in the council, the less likely is the municipality to use comprehensive ERM.*

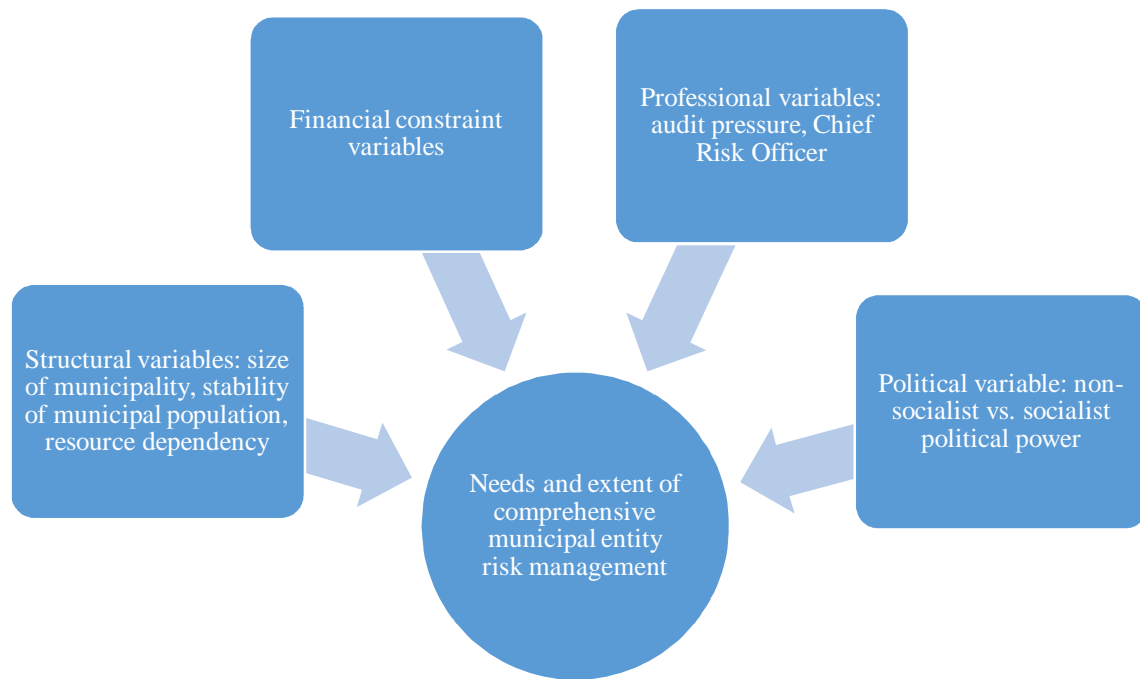


Figure 1. Explanatory model for the adoption of municipal RM.

In the next section we explain the methods and data used to try out the explanatory model.

### 3. Research methods and data

The research data consists of a survey accomplished during late 2012 and early 2013. The survey was targeted at Finnish municipalities (Åland with its 16 municipalities was excluded) and the majority of joint local authorities established for special health care and vocational education. In this article we focus solely on municipalities. Respondents were high-level managers: municipal managers (67), chief administrative (11) and financial (21) managers, chief audit executives (8), Chief Risk Officers (CROs) (5), and two others (one construction chief and one development expert). The CROs may not be as neutral respondents as other respondent groups regarding RM, and this has been taken into account in the analysis.

The response rate was 36% (114 municipalities). The sample of municipalities' characteristics did not significantly differ from the aggregate view of all municipalities in Finland. The averages of the variables used were at the same level as the national averages for Finnish municipalities.



The RM features were measured using three series of questions. One was related to documentation and decision-making on RM (3 questions), another to the comprehensiveness of RM (7 questions), and the third to the implementation and follow-up of RM (6 questions).

We used a linear regression (ordinary least squares, OLS) model, and used as a dependent variable the average of either Combined Variable 1 (RM coverage) or Combined Variable 2 (RM implementation), which both reflected the extent of ERM in municipalities. These combined variables consisted of respondents' answers measured using Likert scales.

As an addition to the factor choice explanations in Section 2, population change was measured by the percentage change of inhabitants from 2011 to 2012. This change describes the stability of the population at the time of data collection. For the regression analysis we transformed negative percentage figures into positive ones, because we were interested in the level of change, not the direction of change.<sup>2</sup> Grant dependency was measured by the share of grant income from central government of total incomes in 2012.

We also examined the questionnaire questions with Likert scales with Exploratory Factor Analysis (EFA) in order to condense the significant dimensions of the questions measuring different dimensions of RM (cf. the use of EFA in Lundqvist 2014). The factor analysis confirmed the relevance of the two combined summary variables that had been formulated, one measuring the *coverage of RM*, and the other the *implementation of RM* (see Section 4). The rotated factor analysis results are in the Appendix table. The EFA results showed that the coverage factor and implementation factor are correlated, but are still two separate factors. This means that a local government may get low scores on the dimensions of the coverage factor but at the same time may get higher scores on the implementation factor.

## 4. Results

### 4.1. Description of ERM popularity

A starting point in comprehensive ERM is that the principles and responsibilities of RM are decided in the political decision-making bodies and included in official RM documentation. Our survey data reveals that only just over one third of local governments had a council document stating their RM principles. On the other hand, around half of the municipal boards had set instructions on how to implement RM and its procedures.

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<sup>2</sup> We also tried with population change between 2005 and 2012; the change to this variable instead of that used did not change our regression analysis results regarding the explanatory power and significant variables.

**Table 1. Risk management documents, instructions and RM work distribution in local governments**

	<b>Principal risk management document</b> 1)	<b>Board instructions</b> 2)	<b>Tasks and responsibilities defined in an official decree/ordinance</b> 3)
Municipalities, % of all	35.0	48.6	74.3
<i>n</i>	103	105	105

1) Statement = The municipality or the joint authority has a document accepted in the council that includes the principles of risk management.

2) Statement = The board has given instructions regarding the implementation of risk management principles and procedures.

3) Statement = Tasks and responsibilities of risk management have been defined in the decree of administration or in other ordinances.

If a local government has decided specifically upon this division of RM tasks and responsibilities, these are normally included in the administrative decrees or other municipal ordinances. The results show that 74% of responding local governments answered that RM tasks and responsibilities are stipulated in a decree or other ordinance. The majority of local governments have allocated RM tasks and responsibilities, but at the same time, this allocation is not always based on higher-level decision-making in councils and boards. A strategy document accepted by the council is no proof as such of a comprehensive RM practice.

#### *Comprehensiveness of risk management.*

In our survey, we asked the respondents to evaluate six statements about the coverage of RM on a Likert scale of 1-5 (ranging from 1 = totally disagree to 5 = totally agree). The statements were the following:

#### Coverage of risk management

1. Risk management covers strategic goals
2. Risk management covers compliance with laws and rules
3. Risk management covers operative risks
4. Risk management covers financing and other essential economy risks
5. Risk management covers different organisational levels (for instance, activity areas and profit centres)
6. Risk management covers outsourced activities

We also asked directly whether the respondent's organisation had used any specific framework or model in arranging RM. This question (Risk management is based on a systematic framework such as an ISO standard, COSO ERM, etc.) is number 7 in Table 2.

**Table 2. Comprehensiveness of risk management, averages (scale 1-5)**

	1. Strategic goals	2. Laws and rules	3. Operative goals	4. Finance & economy	5. Different levels of admin.	6. Out-sourced services	7. Frame-work
<b>Municipalities</b>	3.14	3.66	3.69	3.68	3.52	2.94	1.73
N	106	109	108	109	108	105	90

It appeared that RM covers regulatory, financial and operative risks better than it does strategic and outsourcing risks. If the organisation chooses a framework such as COSO ERM, it should cover all relevant risks and emphasise the most important ones, strategic risks.

One speculative explanation for the relatively low score in our survey for strategic risks may be that respondents consider several strategic risks, such as cuts in government grants or economic recession, as external risks that are non-preventable. If this is true, there may be an inclination to concentrate on those risks over which the municipality has some degree of direct influence (for instance, operative risks).

It appears that risk management is seldom systematic in the sense that it is based on a recognised model such as COSO ERM or ISO 31000. *Around half of the respondents were of the opinion that their RM is not at all based on a systematic framework* (those who answered 1 on the Likert scale). Municipalities had an average score of 1.7 on the 1-5 Likert scale.

### *Implementation of risk management*

We asked respondents' opinions about the implementation of RM components, again offering a Likert scale of 1-5 as above. The statements were as follows:

1. Risk management has been informed systematically to responsible managers (for instance, training)
2. The risk management process includes a systematic evaluation of the environment (for instance, changes in legislation, financing, etc.)
3. Risk management has been coupled with goal setting and goal attainment
4. The risk management process includes risk identification
5. The risk management process includes assessment of risk probabilities and consequences

6. The risk management process includes deciding on risk mitigation
7. The risk management process includes follow-up of risk management implementation

According to the respondents, it appears that RM in municipalities is only moderately transferred into practical procedures. Internal consistency of RM may be difficult to obtain in multi-purpose municipalities.

**Table 3. Implementation of risk management, averages (scale 1-5)**

	1. Informing	2. Environment analysis	3. Coupling with goals	4. Risk identification	5. Risk assessment	6. Risk mitigation	7. Risk control
<b>Municipalities</b>	3.04	2.75	2.97	3.39	3.25	3.18	2.97
<b>N</b>	108	108	108	107	108	108	107

To summarise, our investigation shows that local governments are on average following more of a silo approach than a COSO ERM type model. Arranging RM throughout the whole organisation systematically and comprehensively is rare although not completely non-existent. Local governments have obviously invested more resources in RM in selected activities, such as finance, occupational health and safety, where risks are commonly seen as high from the point of view of the daily work of public administration.

#### ***4.2. Testing the model of RM adoption in municipalities***

Our sample of municipalities represented around one third of all municipalities, and the average size of our sample municipalities (20,000 inhabitants) differed only slightly from the average size of all municipalities (17,000 inhabitants). The capital city Helsinki was not included on our sample, as it is in many respects an exceptional case among Finnish municipalities. After disregarding Helsinki, there were no structural outliers in the data, as all other municipalities are isomorphic in their main organisational features.

When we asked respondents directly about the usage of a systematic RM framework such as COSO ERM or ISO standard, only two respondents from rural municipalities, Virrat (about 7,500 inhabitants) and Rautalammi (about 3,500 inhabitants), scored 5 on the Likert scale (strongly used). If these two outliers are excluded, there seems to be a clear tendency that the bigger the municipality, the more often RM is guided by a systematic framework. This would give some relevance to the applicability of contingency theory and the use of structural explanatory factors.

Next, we created two combined variables, because we wanted to explore the overall adoption of RM. One was a combination of the six questions regarding RM coverage and the other a combination of the seven questions regarding RM implementation. The creation of these two combined variables was supported with the EFA results. Therefore, in Summary Variable 1 (risk coverage) the maximum score was 6\*5 (30 points), in Summary Variable 2 (RM implementation) it was 7\*5 (35 points), and for the two together, 65 points. The cross-tabulation of the two summary variables showed that the wider the risk coverage, the better the procedural RM implementation tends to be (Spearman correlation was 0.647). However, these two summary variables measure two different factors, as the EFA results show. Summary Variables 1 and 2 did not correlate with the size of the municipality (Appendix Table 1).

There were only five Chief Risk Officers (CROs) in the municipalities surveyed, all in larger cities. Based on the sample of four of these cities, it seems that they achieve slightly higher scores on RM implementation (Summary Variable 2) than municipalities on average or municipalities without CROs. This result, as such, is reasonable, taking into consideration that one of the main tasks of a professional risk manager is undoubtedly to make RM operative in a systematic way.

The correlations (Table 1 in Appendix) between the predictors and depended variables of risk coverage and RM implementation were rather weak. For the OLS analysis, we took averages of the dependent variables (Summary Variables 1 and 2). It is appropriate to treat a quantitative ordered discrete variable based on a Likert scale (Carifio and Perla 2007) as if it were continuous, thereby justifying its use as a dependent variable in a regression model (Berry 1993, 47). Models 1 and 2 in Tables 4 and 5 did not show multicollinearity problems (tested with tolerance and VIF coefficients). Furthermore, the plot of regression standardised residuals showed that there were no heteroscedasticity problems.

**Table 4. Dependent variable, average scores of risk coverage (Summary Variable 1).**

		Model 1	UnStd	Collinearity		Model 2	UnStd	Collinearity			
Variables		Std. Beta	B	Sig.	Tolerance	VIF	Std. Beta	B	Sig.	Tolerance	VIF
	(Constant)		3.747	.000				4.334	.000		
	Big Four (dummy)						-.108	-.161	.361	.667	1.499
	IA function (dummy)						-.179	-.250	.205	.473	2.115
	CRO (dummy)						.018	.053	.885	.566	1.766

Accumulated surplus/deficit	.208	9.892E-5	.088	.640	1.564	.154	7.368E-5	.241	.543	1.843
Liquidity days	-.228	-.003	.050	.705	1.418	-.147	-.002	.240	.603	1.658
Loan stock	<b>-.245</b>	<b>.000</b>	<b>.014</b>	<b>.997</b>	<b>1.024</b>	<b>-.239</b>	<b>.000</b>	<b>.018</b>	<b>.938</b>	<b>1.066</b>
Municipal personnel	-.040	-9.908E-6	.695	.892	1.121	-.022	-5.427E-6	.884	.409	2.442
Party variable						-.033	-.002	.757	.823	1.215
Population change						-.125	-.107	.261	.755	1.325
Grant share (%)						-.203	-.010	.161	.449	2.229
Model F-value	2.815					1.885				
Model significance	<b>.029</b>					.058				
Adjusted R <sup>2</sup>	.068					.082				
N	101					100				

Model 1 is reduced to size and financial factors while Model 2 consists of all variables, including the control variables. Big Four and internal audit function had negative coefficients. However, these two variables were statistically insignificant. The insignificance of Big Four was predicted but not the insignificance of internal audit function, which indicates that internal auditing has not been effective in promoting comprehensive RM.

The share of socialist councillors in the council was also a statistically insignificant variable. NPM reforms in the public sector have been mainly considered as practical necessities without causing severe political and ideological disputes in Finland. Anyway, our results support a conclusion that the party variable has no significant effect. Socialist councillors may resist excessive use of business models in local government, but either they are too weak to stop the introduction of such models or they may see that ERM as a managerialist intervention is not as ideologically motivated. In our data, socialists had a majority in two municipalities.

The only explanatory factor that was statistically significant in both models at a 0.05 level was loan stock. The higher the loan stock, the lower the value of the average of Summary Variable 1 and the comprehensiveness of RM in the municipality. This gives some support to Proposition 4, according to which *weak financial health in municipalities is in negative correlation with the extent of risk management*. However, the exploratory power of Models 1 and 2 was very weak. The F-value of Model 1 was significant at a 0.05 level, and the F-value of Model 2 was significant at a 0.10 level.

The only explanatory factor with 0.05 level significance in the regression analysis for the Summary Variable 2 average (implementation of RM, Table 5) was accumulated profit/loss (€inhabitants). The higher the accumulated profit or smaller the accumulated deficit, the higher the average value of RM implementation (Summary Variable 2) and the strength of RM implementation in municipalities. This gives support to Proposition 4.

But again, the F-value of Model 2 was not significant at a 0.05 level. The F-value of Model 1 was significant: Model 1 included only the financial and size variables as independent variables.

**Table 5.** Dependent variable, average scores of risk management implementation (Summary Variable 2).

	Model 1	UnStd	Sig.	Collinearity		Model 2	UnStd	Sig.	Collinearity	
	Std. Beta	B		Tolerance	VIF	Std. Beta	B		Tolerance	VIF
(Constant)		3.249	.000				3.568	.000		
Big Four						-.101	-.214	.373	.726	1,377
IA function						-.001	-.003	.992	.501	1,996
CRO						.115	-.514	.346	.630	1,588
Accumulated surplus/deficit	<b>.316</b>	<b>.000</b>	<b>.011</b>	<b>.614</b>	<b>1.629</b>	<b>.306</b>	<b>.000</b>	<b>.025</b>	<b>.518</b>	<b>1,930</b>
Liquidity days	<b>-.284</b>	<b>-.005</b>	<b>.016</b>	<b>.677</b>	<b>1.476</b>	-.208	-.004	.101	.590	1,695
Loan stock	-.106	-8.861E-005	.276	.972	1.029	-.112	-9.269E-5	.264	.933	1,071
Municipal personnel	.042	1.506E-005	.679	.887	1.127	-.049	-1.727E-5	.740	.428	2,334
Party variable						.024	.002	.817	.858	1,165
Population change						-.111	-.134	.320	.754	1,325
Grant share (%)						-.090	-.006	.533	.447	2,239
Model F-value	2.794					1.645				

Model significance	.030						.106				
Adjusted R <sup>2</sup>	.066						.060				
N	103						102				

## 5. Discussion

The research results as such are representative of the reality of Finnish local government. They are based on a survey that used personal opinions of respondents as an indicator of RM coverage and implementation. Considering the positions of the respondents, it is plausible to expect that they have a comprehensive view of and sufficient competence to assess the condition of RM in their own organisations.

We conclude that comprehensive and formal RM is not widely used in Finnish local government. As its adoption is voluntary, it requires there to be a perceived need for such a system in local governments, which does not seem to be the case. Our survey results indicated that around 26% of municipalities had extensive risk coverage, while around 18% had implemented RM procedurally in a wide manner. In brief, a silo approach is more common than a comprehensive and formal approach to RM in Finnish local government.

There is an indication that the informed usage of a systematic framework like COSO ERM was more common in larger municipalities than in small ones. However, among the variables tested in our survey, only financial constraints explained to a degree the adoption of comprehensive RM models. It may be that local governments that have a good economic situation can afford ERM consulting and formal ERM systems that tie up scarce resources. Municipalities that have financial problems may see ERM formalities as extra costs and burdens that they cannot afford.

In all, the explanatory power of the tested model was overall weak, and over 90% of the variance of the depended variable remained unexplained. *This is an important result that implies that mainly other than structural or local political factors explain the extent of comprehensive RM.* We may thus assume that there are critical case-specific features of comprehensive RM in the local government context that affect its adoption.

**Table 6.** Summary of explanatory power of tested variables

Existence of ERM Explanatory power	Structural variables	Financial constraints	Other control variables
None	Size, unstable population, grant dependency		Audit pressure, CRO, political power constellation in council



Weak		Indebtedness, lack of surplus	
Strong			

One of the most plausible explanations for the overall rarity of comprehensive RM is that the preconditions for the comprehensive ERM ideal formulated by COSO may be unrealistic (cf. Power 2009, 850-851), or at least too cumbersome or laborious relating to the resources available for risk management in local governments. This would also create a connection with the explanatory power of financial constraints.

There are similar reasons for the slow adoption of MIS in local government (Heeks 1999). Municipal decision-makers may be satisfied with a silo approach focusing on activities, compliance and financial risks that are operational and reasonably manageable (cf. Micheli et al. 2012). This approach may be subjectively interpreted to be enough of a response to environmental uncertainties and evolving risks. Many of the most severe external risks are beyond the influence and preventive RM of local governments.

Because structural and organisational features do not explain the slow adoption, with the exception of financial constraints, and because even ideological division in local politics has equally low explanatory power, we may seek an answer from role-specific aspects of decision-making and governance processes. Primarily, local governments in Finland and other Nordic welfare societies are self-governing multi-purpose entities. In spite of increased managerialism, they are politically driven organisations in which different actors have different and partly conflicting risk policy and risk appetite considerations, which may counteract the steady implementation of one comprehensive RM policy permeating all operative silos and requiring a commensuration process. Problems of commensurating risks in politically driven multi-purpose public organisations may effectively hamper attempts to organise comprehensive COSO ERM type systems (Schiller and Prpich 2014).

Another important factor that has a similar tendency to support a silo mentality is the role of public managers as agents of change as a decisive factor in determining innovation adoption (Moon and Norris 2005; Damanpour and Schneider 2009; Carassus et al. 2014). According to COSO, the internal environment is the basis for ERM, within which the most important factor is the management's philosophy of managing risks (COSO 2004, 27-28). The attitudes of key managers and board members towards RM are important qualitative factors in local government. Pressures to adopt voluntarily comprehensive RM are not successful if senior management is not responsive to the idea. In addition, some studies emphasise that front-line staff also considerably affect the implementation of RM, as they become involved only when a concept has real value for their work (Crawford and Stein 2005). In all, in the Finnish case, the rarity of Chief Risk Officers and the low

profile of risk management among managerial functions may create conditions which are not favourable for the wide diffusion of ERM systems.

Our findings indicate that as neither the factors that explain ERM diffusion in business sector nor the factors that reflect the structural and organisational features of local governments explain the diffusion of ERM in local government, there is need for a deeper understanding of specific aspects of RM in local government and the construction of new explanatory models that better match such model specificity in a local government context. This may also require the use of a case study approach and qualitative methodology.

## **6. Conclusion**

As the conventional structural and organisational factors included in our model do not provide sufficient explanation, we may assume that particular case-specific features play a key role in the diffusion process of RM. It seems that the special nature of risk management together with a silo mentality hinder the adoption of the comprehensive RM model developed originally in the business environment. We assume three reasons for the slow adoption.

First, the risk environment and institutional characteristics of public sector entities, including a persisting silo mentality, do not provide a particularly strong incentive for politicians or public managers to pursue voluntarily the adoption of a comprehensive RM model. Second, COSO ERM as a business model is largely insensitive to the needs and realities of public sector organisations (Baker 2008). This obviously decreases this model's appeal in local government. Lastly, neither formal nor intuitive cost-benefit assessment by public managers supports the adoption of COSO ERM. That is, the expected benefits may look insignificant when compared with the total cost of the introduction and maintenance of the system.

Our overall conclusion is that public sector organisations, when given a general competence to decide on local affairs, are more rational and selective in adopting business models than is generally assumed.

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**Appendix Table 1. Combined variable and factor correlations, Pearson Correlation**

	Combined Variable 1	Combined Variable 2	Inhabitants 31.12.2011	Municipal personnel	Loan stock	Liquidity	Accumulated surplus/deficit	CRO	Big Four	IA function	Population change	Grant dependency	Party variable (socialists)
Combined Variable 2	.631**	1											
Inhabitants 31.12.2011	.000	.106	1										
Municipal personnel	.005	.120	.987*	1									
Loan stock	-.250*	-.112	.031	.027	1								
Liquidity	-.095	-.093	.066	.041	-.121	1							
Accumulated surplus/deficit	.108	.186	.298*	.295**	-.143	.520**	1						
CRO	-.037	.119	.478**	.546**	.057	-.050	.124	1					
Big Four	-.207*	-.113	.222*	.245**	.137	.264**	.132	.414**	1				
IA function	-.064	.107	.599*	.622**	.035	-.028	.150	.365**	.236*	1			
Population change	.127	.176	.458**	.468**	-.008	.003	.236*	.216*	-.052	.430*	1		
Grant dependency	-.154	-.224*	-.564**	-.576	-.080	.044	-.318**	-.255**	-.080	-.590*	-.665**	1	
Party variable	.004	.116	.190*	.220*	-.015	-.002	.081	.202*	.106	.324*	.194*	-.289*	1

**Appendix Table 2. Factor Analysis (EFA)**

**Pattern Matrix<sup>a</sup>**

	Factor	
	1	2
Risk identification	<b>,962</b>	-,081
Risk assessment	<b>,886</b>	-,046
RM coupled with goals	<b>,850</b>	-,066
Risk mitigation	<b>,763</b>	,068
Follow-up of RM	<b>,707</b>	,067
Systematic informing	<b>,695</b>	,098
Environmental risk analysis	<b>,600</b>	,176
Operative risks	-,135	<b>,739</b>
Risks of outsourced activities	,012	<b>,626</b>
Risks of different organisational levels	,087	<b>,612</b>
Financial risks	,046	<b>,539</b>
Compliance risks	,073	<b>,467</b>
Strategic risks	,241	<b>,458</b>

RM implementation

Risk coverage

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalisation.

a. Rotation converged in 4 iterations.